

***WATSON-
MARLOW***

202F/AA

Fixed speed cassette pump

Installation and operating instructions

INTRODUCTION

We believe that you will be pleased by your purchase of this Watson-Marlow Cassette Pump. It is engineered to particularly high standards and will give you many years of accurate and reliable operation.

Using this pump is very simple, but we do advise you to read these instructions before you do so.

Section 1: FLOW RATES

The table indicates typical flow rates obtained when pumping water at room temperature. Actual flow rates obtained will vary with suction and delivery pressures, temperature and fluid viscosity.

Tube Bore mm	Colour Code	Flow rate (ml/min) 20rpm/50Hz	24rpm/60Hz
0.127	Orange/Black	0.010	0.012
0.19	Orange/Red	0.024	0.029
0.25	Orange/Blue	0.056	0.067
0.38	Orange/Green	0.96	0.115
0.50	Orange/Yellow	0.16	0.192
0.63	Orange/White	0.22	0.26
0.76	Black/Black	0.30	0.36
0.88	Orange/Orange	0.44	0.53
1.02	White/White	0.58	0.70
1.14	Red/Red	0.74	0.89
1.29	Grey/Grey	0.90	1.08
1.42	Yellow/Yellow	1.16	1.39
1.47	Translucent	1.26	1.51
1.52	Yellow/Blue	1.36	1.63
1.65	Blue/Blue	1.50	1.80
1.85	Green/Green	1.96	2.35
2.05	Purple/Purple	2.34	2.81
2.28	Purple/Black	2.84	3.41
2.54	Purple/Orange	3.64	4.37
2.79	Purple/White	4.08	4.90

Section 2: MANIFOLD PUMP TUBING FOR 202F/AA

Colour Code	Bore mm	Vinyl	Silicone	Solvent Resistant	Acid Resistant
Orange/Black	0.127	TE018		TRO18	
Orange/Red	0.19	TE019		TRO19	
Orange/Blue	0.25	TE001		TRO01	
Orange/Green	0.38	TE002		TRO02	
Orange/Yellow	0.50	TE003		TRO03	TV003
Orange/White	0.63	TE004	TS004	TRO04	TV004
Black/Black	0.76	TE005	TS005	TRO05	TV005
Orange/Orange	0.88	TE006	TS006	TRO06	TV006
White/White	1.02	TE007	TS007	TRO07	TV007
Red/Red	1.14	TE008	TS008	TRO08	TV008
Grey/Grey	1.29	TE009	TS009	TRO09	TV009
Yellow/Yellow	1.42	TE010	TS010	TRO10	TV010
Translucent	1.47		TS020		
Yellow/Blue	1.52	TE011	TS011	TRO11	TV011
Blue/Blue	1.65	TE012	TS012	TRO12	TV012
Green/Green	1.85	TE013	TS013	TRO13	TV013
Purple/Purple	2.05	TE014	TS014	TRO14	TV014
Purple/Black	2.28	TE015	TS015	TRO15	TV015
Purple/Orange	2.54	TE016	TS016	TRO16	TV016
Purple/White	2.79	TE017	TS017	TRO17	TV017

Section 3: INSTALLATION

Ensure that the supply voltage and frequency corresponds with that marked on the rear of the unit.

The mains supply cable is coloured in accordance with the following code:

Brown	Live
Blue	Neutral
Green/Yellow	Earth

The 202F/AA can be operated at ambient temperatures from 0°C to 35°C. Storage temperatures from -40°C to 70°C are permissible, but allow time for acclimatisation before operating. An operating unit should be positioned to allow a free passage of air around it.

WARNING Dangerous voltages (at mains potential) are present inside the drive module. Isolate the mains before removing the cover.

Should the pump fail to operate, check the following:

That mains electricity is available at the unit.

That all fuses are intact.

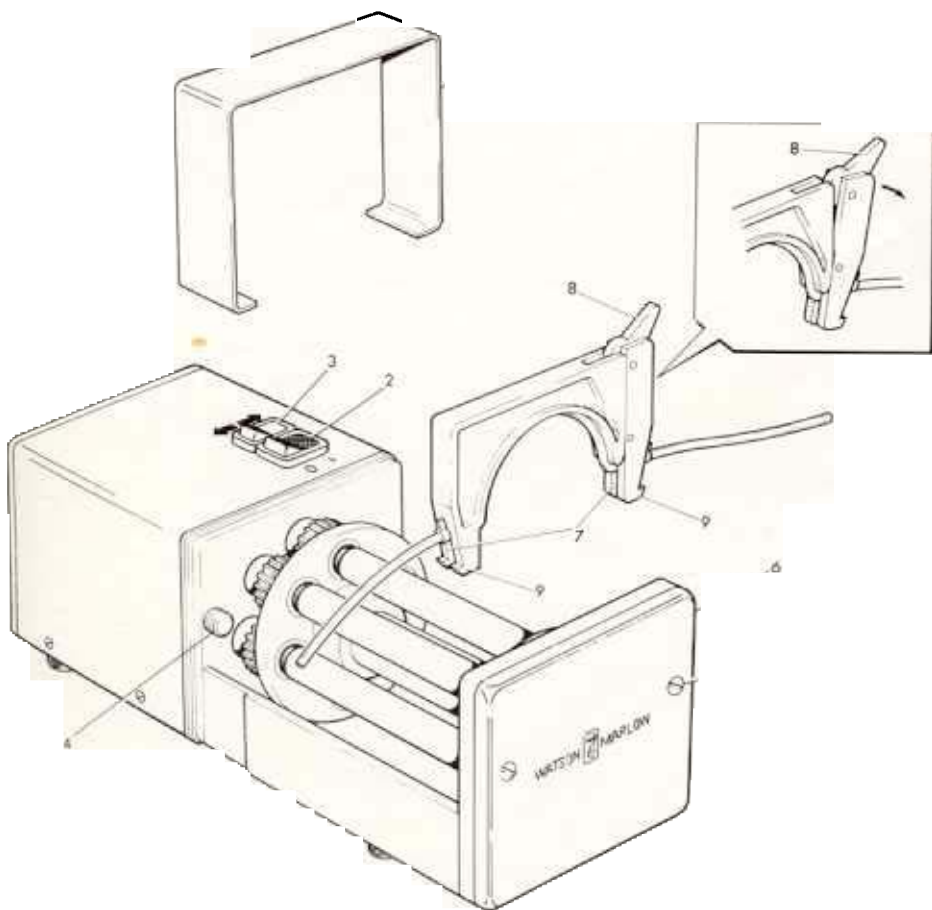
That the pump is not stalled by incorrect fitting of tubing.

That the pumphead is properly located and securely attached to the drive module.

Section 4: OPERATION

CAUTION All cassettes should be in position in the pumphead whilst the pump is operating even if some do not have tubing loaded into them. This lessens the risk of damage to the rotating pumphead rotor and is safer for the user.

The pump is switched on by the green illuminated rocker switch (2). The direction of rotation is set by the second rocker switch (3).



Section 5: CASSETTE LOADING

These cassettes are designed only for use with manifold pump tubing.

Select the required length of tubing and place it, without twist or stretch into the retaining slots (7). Depress the cam adjustment lever (8) and push the cassette leg downwards and inwards.

Load the cassettes into the pumphead starting at the drive module end.

Ensure that both retaining lips (9) are properly engaged, then raise the cam adjustment lever to its vertical position to give the normal tube occlusion setting. The final flow rate and delivery pressure may be varied slightly by adjusting the cam adjustment lever position.

In most cases it will be found that the rollers will pull the tube through the cassette until the colour coded wishbone on the inlet side rests again the cassette. When this does not happen, pull the tube gently through the cassette.

Section 6: CASSETTE REMOVAL

Depress the cam adjustment lever fully and lift out the cassette.

There is no need to switch off the drive module to remove a cassette and the removal of a cassette will not disturb the pumping action of any other.

Section 7: EXCHANGING PUMPHEADS

It is possible for 4, 10 or 16 channel pumpheads fitted to 202F/AA units to be interchanged. Spring off the cover (1) over the planetary gearbox and unscrew the two knurled screws (4) holding the pumphead to the drive module. Reverse this procedure to fit the replacement pumphead.

If a replacement pumphead is required, please specify 202AA/4, 202AA/10 or 202AA/16 according to the number of channels required.

Section 8: CARE AND MAINTENANCE

After use and before cleaning isolate the drive module from the mains. Withdraw the cassettes from the pumphead and remove the tubing. Wash the cassettes in a mild detergent solution. If there has been excessive spillage, removal of the pumphead will aid cleaning.

Periodically, inspect all moving parts for wear, and ensure all bearings and rollers are free to rotate.